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国产泽泻科植物特有种——腾冲慈姑*

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ON *SAGITTARIA TENGTSUNGENSIS* (ALISMATACEAE), A SPECIES ENDEMIC TO CHINA

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Abstract A revised description of *Sagittaria tengtsungensis* H. Li is proposed on the basis of examing all specimens and investigating the type locality. The data from morphological comparison and its distribution support the recognition of two endemic species, *S. tengtsungensis* and *S. potamogetifolia* Merr. in China.

Key words *Sagittaria tengtsungensis*; *S. potamogetifolia*

摘要 本文通过对腾冲慈姑 *Sagittaria tengtsungensis* 模式产地的考察，并在查阅了所有馆藏标本的基础上对腾冲慈姑的形态描述进行了修订。有关形态特征的比较以及不同的地理分布区等研究结果均支持腾冲慈姑和小慈姑为两个中国特有种的观点。

关键词 腾冲慈姑；小慈姑

Sagittaria tengtsungensis H. Li, endemic to China, was first described and illustrated in 1986 (Li, 1986). This is a rare aquatic monocot, presently known only from Yunnan, China. Since the type specimen is sterile, the original description about sepals, achenes and reproductive characters were uncertain and questionable (Chen, 1989). After examining all known specimens of this species preserved in various herbaria (PE, KUN, SYS, etc.) and investigating its type locality (Tengchong, Yunnan), the present authors propose a revised description for *Sagittaria tengtsungensis* as follows:

Perennial; submersed or emersed herb. Rhizomes 1 cm long. Leaves basal, submersed or emersed, blades phyllodial or strap-shaped, 4～7×0.1～0.2 cm when submersed, or ribbon-like to linear-lanceolate, 4～11×0.4～1.6 cm, apex acute when emersed. Petioles 10～32 cm long, ca. 2 mm in diameter, broadly sheathing at the base. Bulbils numerous, globose, subtended by the sheath. Scapes simple, erect, with 2～4, 3-flowered whorls, 25～60 cm long. Bracts membranous or occasionally thickened, connate at the base. Flowers unisexual; sepals 3, green, ovate, 5～7×2.5～3 mm with membranous margins, closely

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appressed to the receptacle at maturity (Fig. 1:C,E); Petals 3, white, 1～1.5 cm long. Pistillate flowers 1～3 at the lowest whorl of the scape, subsessile or on 5 mm long markedly thickened pedicels. Pistils numerous, free, compressed. Staminate flowers with 1.5～3 cm long slender pedicels, stamens numerous, filaments ca. 2 mm long, linear or subulate, the oblong or ovate anthers the same length as or slightly shorter than filaments (Fig . 1 : F) .

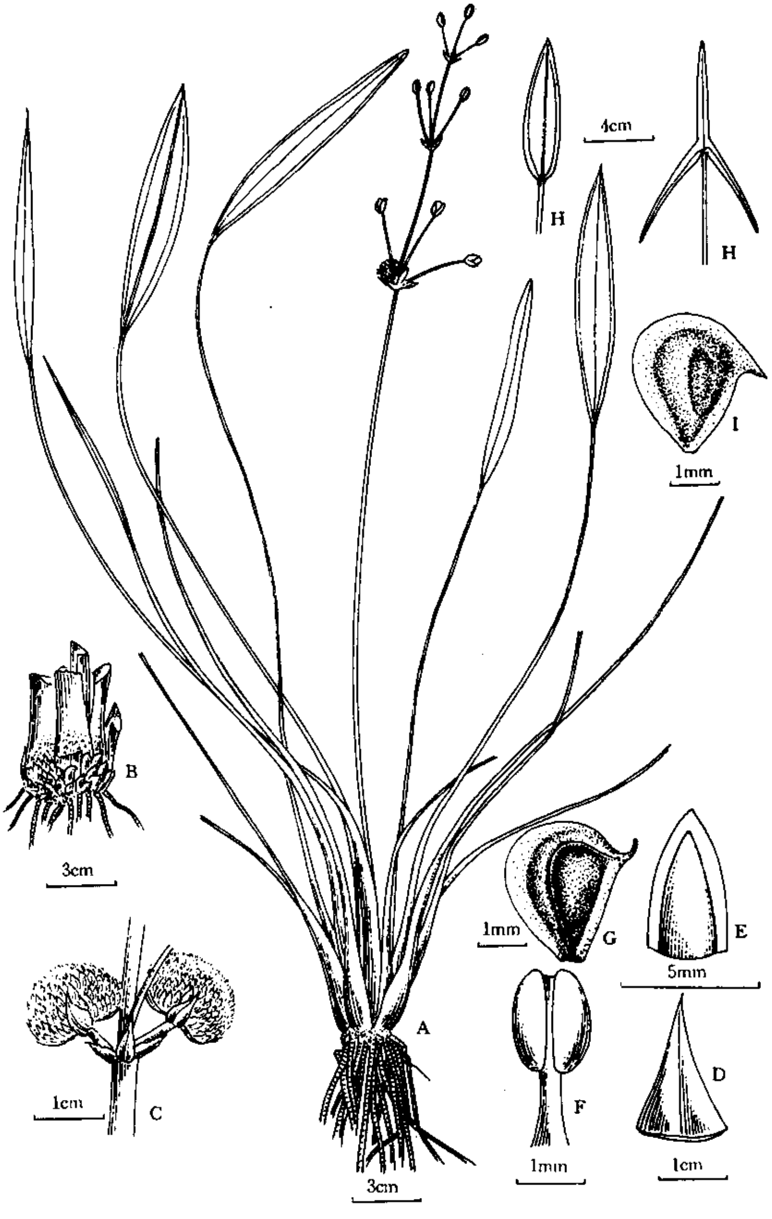

Fig. 1 A～G. *Sagittaria tengtsungensis* H. Li A. habit; B. bubils; C. mature pistillate flowers and bracts; D. dorsal bract; E. sepal; F. stamen; G. achene. H～I. *Sagittaria potamogetifolia* Merr. H. leaves; I. achene.

Achenes obovate, laterally compressed with a slight flange following the outline of the seed cavity on each side, winged, 3～4×2.5～3 mm. Beak of achenes recurved, ca. 0.4 mm long, vertically to obliquely inserted (Fig. 1: G).

Yunnan: Tengchong, Zizhi, alt. 2000 m, S. G. Wu 00724 (type, KUN), Q. F. Wang W070 (WH); Dara, T. T. Yü19189 (PE); Ten Yuen valley, G. Forrest 8182 (photograph, SYS).

This species grows in paddy fields and marshes at an altitude of 2000 m. Leaves may be submersed or emersed depending on the water depth. The leaves of plants growing in paddy fields without water are all ribbon-like to linear-lanceolate, but never sagittate, and those of the plants growing in marshes with water to 20 cm deep are submersed, phylloidal to strap-shaped. A comparsion of the developmental variation of leaf-form between *Sagittaria tengtsungensis* and its closely related species *S. potamogetifolia* Merr. is shown in Fig. 2.

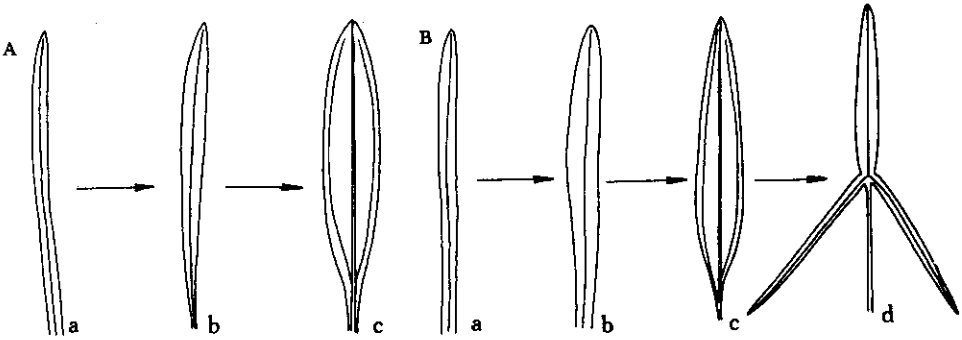

Fig. 2 Developmental variation of leaf-form. A. *Sagittaria tengtsungensis* H. Li. a. submersed; b. floating; c. emersed. B. *S. potamogetifolia* Merr. a～b. submersed or floating leaves of immature plant; c～d. emersed leaves of mature plant.

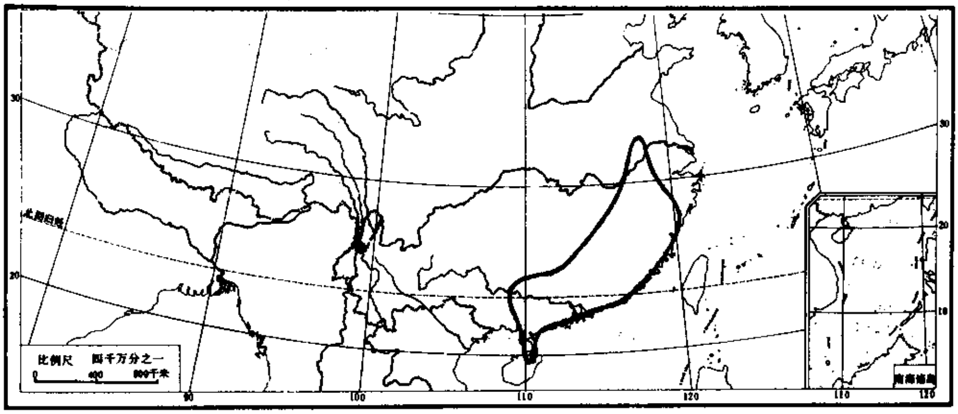

Fig. 3 Distribution of *Sagittaria tengtsungensis* H. Li (1) and *S. potamogetifolia* Merr. (2), "●"showing the study site.

Among leaves with various forms in *Sagittaria*, the phyllodial leaves were considered primitive while sagittate leaves advanced (Arber, 1920). According to our study on the developmental variation of leaf-forms and other morphological characters, we support the view-point that *S. tengtsungensis* is probably intermediate between the two subgenera, Subgen. *Sagittaria* and Subgen. *Lophotocarpus* of *Sagittaria* (Chen, 1989)

Sagittaria tengtsungensis is closely related to another Chinese endemic species *S. potamogetifolia*, a member of the subgenus *Sagittaria* (Chen 1992, 1989; Li 1986). The appressed sepals (Fig. 1:C), the non-sagittate leaves (Fig. 1:A), the size, shape and insertion of the achene-beak (Fig. 1:G), as well as the distribution (Fig. 3) of *S. tengtsungensis* are quite different from those of *S. potamogetifolia* (Fig. 1:H, I. Fig. 3). All of these indicates that they are two distinct endemic species to China.

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